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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,770	06/26/2003	Shu Namiki	239422US-8CONT	4074

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EXAMINER

HUGHES, DEANDRA M

ART UNIT PAPER NUMBER

3663

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/603,770

Applicant(s)

NAMIKI ET AL.

Examiner

Deandra M Hughes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 13, 15 and 19 is/are rejected.
- 7) ☒ Claim(s) 2-12, 14, 16-18 and 20-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/5/03; 6/26/03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 13, 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ackerman (US 6,384,763 filed Jan. 25, 2001) in view of Masuda (JP2000332332A published Nov. 30, 2000 and Agrawal (Fiber Optic Communication Systems, 1997; pgs. 380-381).

Ackerman teaches multimode pumping of a Raman amplifier (fig. 4 discloses the modes of Pump 1 and Pump 2 with different central wavelengths). However, Ackerman does not specifically disclose controlling the operating state of at least one of the pumps to change the amplification band of the Raman medium. Agrawal teaches, as it is well known in the art, Raman amplification of a signal in a wavelength band approximately 13.2 THz (100nm) away from the pump signal. As a result, changing the wavelength, i.e. operating state, of the pump signal will cause the signal which is Raman amplified by the pump to shift. Further, Masuda teaches controlling multimode Raman pumps (fig. 6 of Masuda, #5a and #4a) via a pump control (fig. 6, #7 – please note the computer generated English translation of JP2000332332A included in the back of the publication). It would have been obvious to one of ordinary skill in the art (e.g. an optical engineer) at the time the invention was made to shift the pumping wavelength of

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one of the multimode pumps via a control for the advantage of changing the amplification band of the Raman amplifier.

With regard to claim 13, the multimode pumps of Ackerman are preinstalled in they are not assembled on site.

Allowable Subject Matter

3. Claims 2-12, 14, 16-18, and 20-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter.

With regard to claims 2, 7, and 12, the prior art does not teach or make obvious providing more than two multimode laser light sources.

With regard to claims 14, 16, and 20, the prior art does not teach or make obvious that changing the operation status is one of an on-status or an off-status.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Eggleston discloses Raman scattering as a result of multimode pumping. Suzuki discloses multimode Raman pump control.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deandra M Hughes whose telephone number is 703-306-4175. The examiner can normally be reached on M-F, 8:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G Black can be reached on 703-305-9707. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMH

Thomas G. Black
THOMAS G. BLACK
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GROUP 3660